Science and Mathematics Accessible Resource Tool
(SMART)

A. APPLICANT. Brief history of the Authority. The Arkansas Science & Technology Authority (the Authority) was created by statute in 1983. The Authority is comprised of a Board of Directors, Advisory Committees and staff. The 14-member Board is appointed by the Governor to staggered four-year terms. The Authority's staff is led by the President, the chief executive officer, who is responsible for the agency's programs, services and support functions. The Authority's activities are divided into three programmatic areas that include research, development and technology, each executed by a Vice President. In its efforts to bring the benefits of science and technology to the people and state of Arkansas, the Authority has set high performance measures and objectives, one of which is to make university scientists, technologists, and engineers more nationally competitive for federal research funds. The Authority follows through by continually supporting entities like Arkansas Manufacturing Solutions (AMS), Arkansas Biosciences Institute, the Experimental Program to Stimulate Competitive Research (EPSCoR), and the Arkansas Department of Economic Development (ADED) with whom it collaborates in the R&D tax credit program. The Authority also supports larger-scale research projects and research infrastructure investments, by working through numerous boards and committees that support strategic research and research infrastructure projects that are relevant to the state's economic growth. The Authority advocates the need for advances in science, mathematics, engineering and technology to accomplish these specific goals in research, development, and technology. With this in mind, the Authority has also taken a proactive approach by working to improve the science, mathematics and technology skills of the state's children in order to improve competencies and participation in these fields.

The history of the Arkansas Math and Science Coalition and Mathematics and Science Education Center. The Arkansas Math, Science and Technology Coalition (the Coalition) began in 1993 when Dr. William Durand, mathematics professor at Henderson State University, was named the executive director and received a $10,000 grant from the National Association of State Math and Science Coalitions (NASSMC) to organize a state coalition. Also in 1993, the National Science Foundation (NSF) awarded Arkansas a ten million dollar grant to begin the Statewide Systemic Initiative to improve mathematics and science education. Dr. Suzanne Mitchell, project director at the Arkansas Department of Higher Education, became the co-director of the coalition and began to connect math and science education needs to university centers to coordinate the effort. The NSF grant provided the means to create math and science partnerships in five regions of the state and the Arkansas Math and Science Coalition was loosely organized around these educational regional partnerships. By 2003, the five partnerships grew to twelve Centers for Mathematics and Science Education located at institutions of higher education. The twelve Mathematics and Science Education Centers have become financially sustainable entities with university support of staff and general operations. The Arkansas Department of Education (ADE) supports twelve mathematics specialist salaries, and an NSF grant supports salaries for the twelve science specialists. Centers help sustain their work with school districts through consultation fees for services.

In 2004, Sherry Lane was named the new executive director of the Coalition and Henderson State University was awarded a $20,000 grant from NASSMC to strengthen the Coalition, to link science and math leaders to business and industry leaders and policy makers, to provide a communication vehicle to share information about math and science initiatives, and to find a means to sustain three NASA Explorer schools in Arkansas. During this past year, an organizational renovation has

occurred, and a strong, enthusiastic network of individuals comprising the reorganized Arkansas Mathematics, Science and Technology Coalition have coalesced to support the efforts to improve mathematics, science and technology education. A governing Coalition Board (comprised of individuals representing industry, state government, and educational organizations) has been appointed to direct this effort and an organizational structure has been formalized creating an umbrella encompassing the Math/Science Resource Centers. A chart of the organizational structure of the Coalition is included in **Appendix A** to indicate how the Math/Science Resource Centers fit under the umbrella of the Coalition and Coalition Board.

Expansion of the Arkansas Science & Technology Authority Mission and Mission of the Coalition. The Authority and the Coalition are jointly requesting funding for this program. The two organizations share the common goal of promoting educational skills that will affect our future workforce. Both advocate the need for the strong science, mathematics, engineering and technology educational background that is critical in the knowledge-based economy. Both recognize that mathematics and science teachers are the single most critical effector of change in the initiative to improve educational competence of children who will be the future pool of a knowledge-based workforce. Also, they advocate that the classroom teacher, and resources that enhance the effectiveness of the teacher, can positively influence student attitudes about science and mathematics.

With this in mind, the Authority and the Coalition have joined forces to support a proposed web-based program which will provide on-line access for teachers within all communities statewide to strengthen their science and mathematics curriculum and add resources for utilizing "hands-on inquiry activities." In addition, the association of the two organizations insures a supportive cooperative network during the tenure of the grant and allows an exit strategy for the Authority after the website/database is established and developed, with the Coalition sustaining and nurturing this program for an extended period of time as the program expands in future years.

Description of the Authority's and the Coalition's goals and objectives and their relationship to the Winthrop Rockefeller Foundation's mission and program areas of concentration. The Authority's mission is to bring the benefits of science and advanced technology to the people and state of Arkansas through promotion of activities aimed at scientific research, technology transfer and development, and business innovation. A variety of strategies are employed to promote university funding for research, by supporting innovative technology and entrepreneurial development of knowledge-based companies, and by encouraging improvements in math, science and engineering education. The Authority's programs are described at Http://www.asta.ar.gov.

The Coalition is a nonpolitical network of individuals organized to effect change in Arkansas education by promoting and enhancing mathematics, science, and technology disciplines. The work of the Coalition is attuned to the needs of a worldwide-competitive workplace and directed toward the development and implementation of sound education policies and programs that will meet that need. The Coalition is composed of leaders from major Arkansas businesses, leaders of the Arkansas Legislature, state agencies, educational experts from Arkansas educational agencies, institutions and science centers, and philanthropic foundation directors with interest in educational projects. The purpose of the Coalition is:

- to promote educational skills that will affect our future workforce;
- to support high quality math/science/technology education;

- to serve as a think-tank for sharing and brainstorming ideas to improve math, science, and technology education;
- to advocate educational models that have proven success in science and math classrooms; and
- to influence educational policy, public understanding, and public engagement in mathematics, science and technology education.

The Authority, the Coalition and the Winthrop Rockefeller Foundation share a common goal: to promote the educational skills of the future workforce. This common goal is focused through the promotion of quality Arkansas education and by promoting and enhancing mathematics, science, and technology disciplines. These strategies of the Authority and the Coalition are directly inline with the aims of the Winthrop Rockefeller Foundation's, which is to promote quality of life for Arkansas communities through educational opportunities and to enhance economic development opportunities.

Description of how the project furthers the Authority's and Coalition's mission and that of the Winthrop Rockefeller Foundation. The goals and objectives of both organizations are compatible with the mission of the Winthrop Rockefeller Foundation to improve the lives of Arkansans by using its resources to build and sustain strong communities for all Arkansans and by supporting and strengthening organizations that serve them. The focus on the program described in this proposal is in-line with WRF interest in promoting the quality of life for Arkansas communities through educational opportunities. Economic opportunity is inherently tied to an individual's educational experiences. A sound mathematics and science educational background is imperative in developing the necessary skilled workforce if Arkansas is to be a vibrant participant in the knowledge-based economy. Enhancing the resources that teachers may draw upon will not only advance science, mathematics, technology, and engineering skills in our children, but will strengthen our communities.

B. NEED. In 2002, in response to the need for increased "hands-on" inquiry based instruction in the middle school classroom, the Arkansas Science & Technology Authority, with the assistance of the Winthrop Rockefeller Foundation, initiated a Minigrant program designed to affect the way in which middle school science is taught. The Minigrant Program allowed a small investment of funds in teachers to enable them to utilize multiple "hands-on" activities in the science classroom or in many cases to create new activities developed for their specific science classroom needs. Over a three year period, the program funded 297 middle school teachers with a minimum of $500 per year to purchase supplies for science teaching activities. Teachers could reapply each year for a continuous period of up to three years.

The success of the three year program has produced a wealth of creative, practical activities for middle school students which generate enthusiasm and an interest in science. Not only do these activities strengthen the curriculum in these classrooms, they are intricately tied to the recommended curriculum of the state framework required by the Arkansas Department of Education. This, in essence, means that the implicit value of these "hands-on" activities becomes greater given that teachers are faced with extensive curriculum and testing requirements that restrict time for all but extremely meaningful activities. Recognizing the value of these previously developed activities, it then becomes urgent to share this material with other teachers in our state. To that end, we propose a program which will provide educators with easy access to these resources

to enhance the science (and later the mathematics) education in their classroom. This will be a cooperative effort of the Authority and the Coalition. The following is a description of a **five year program** which will provide teachers with **on-line one-concept lesson plans** to enrich the "inquiry-based" instruction in their classrooms. The focus of this proposal will be in developing an **on-line access tool** for **sharing this information** with other teachers statewide. The proposed program, entitled SMART (Science and Mathematics Accessible Resource Tool), will begin with the curriculum materials generated from the Minigrants program previously funded by WRF. These science activities will serve as the foundation for developing the searchable web-database. This base of material for middle school science can then grow vertically for grade levels other than middle school and/or expand horizontally to other disciplines, such as mathematics as the program matures.

C. PROJECT. Program Overview and strategies: The program will encompass conversion of selected middle school science activities previously developed in the Minigrant program into individual structured one-concept lesson plans. Each of the lesson plans developed will include the objectives of the activity, all materials needed, a detailed strategy or steps involved in the activities and performance measures and/or expected outcomes. Each activity will then be **cross-referenced** to the state science framework (the science curriculum requirements developed by the Arkansas Department of Education, ADE). These one-concept lesson plans will be focused and formatted each summer by previous Minigrant recipients during a special two-week workshop held at the various Math and Science Resource Centers. During the workshops, each participant will work with the science specialists to create and publish these single-concept lesson plans from the activities that have proven successful in their own classrooms. Each activity will later be reviewed by Science and/or Math Curriculum Specialist at the ADE for each framework reference before they are incorporated into the database.

To initiate the development of this database, we will contract with a company possessing information technology expertise that specializes in website database creation, such as Rural Sourcing in Jonesboro, Arkansas. This new SMART website will be universally accessible for all teachers statewide. The format of this database will be very user friendly and each one-concept activity will be catalogued by science/math field, subject/topic relevance, grade level, and corresponding specific framework area. Cross-referencing will allow a teacher utilizing this database to search for an activity based on any or all of the criteria listed.

TIMELINE

General Schedule. Each cycle is an 18 month period with a six month overlap. (The schedule for July 2005 through December 2006 will be used as an illustration.) The summer and fall of year one will require extensive planning utilizing resource center planning workshops, "mock" workshops with teachers, as well as team meetings with the company contracted to design the database for the website. Prior workshop planning will include most appropriate ways to organize the workshops geographically and mechanisms for solicitation of workshop participants and selection of best participants from those that apply. This period will also involve intense work with the group contracted to design the website/database. The company that is contracted to develop this database will meet with the Authority and the Coalition Resource Center Specialists to develop a website design that facilitates the cross-referencing capacity and provides user-friendly access to components in this web-base. Piloting of this website will occur during this one year period using sample one-concept lesson plans at mock workshops at resource centers. Data from these "mock" workshops will also be used to pilot the tracking system of the database that is developed through

visits to this website. (See "**Evaluation or measurement of program impact"** and "**Specific indicators of change"** for the uses of the tracking mechanisms built into the database.)

Actual Workshops will be held in early to mid summer at the end of year one. September through December will then be used to validate the correct framework designations on each lesson plan by working with the State Science Curriculum Specialists at ADE and later entry of these lesson plans into the website database. The first set of one-concept lesson plans should be available at the website on or before January 1, 2007. During the fall of 2006, the resource centers will evaluate the success of the workshops and start the planning for the next summer's (2007) workshops. This overlapping schedule will be repeated over the five and a half (5 ½) year period of the grant.

Year 2006 workshop. Six former Minigrant recipients (from the pool of 2002-2005 recipients), in a geographic region corresponding to one of the Math and Science Resource Centers, will be invited to participate in a two-week work session to develop one-concept lesson plans. This will be repeated in three additional resource centers for a total of four centers and 24 teachers participating. Center selection will be organized such that teachers will be able to commute to the sessions. Summer stipends ($1500) plus mileage (average of approximately $30/day) will be awarded to the participating teachers to compensate them for their summer effort. Each center participating will receive $2000 to cover the cost of working-lunches for teachers and participating staff and other miscellaneous expense accrue in hosting this function. After the products of these summer sessions have been reviewed by specialists at the Arkansas Department of Education (ADE) to verify correct framework correlation, these materials will be used to develop the initial base for the website-database.

Year 2007 workshop. Twenty-four former Minigrant recipients in four geographic regions corresponding to the Math and Science Resource Centers will be invited to participate in a two-week work sessions to develop the one-concept lesson plans. The participating teachers and the selected centers may be repeated or new participants and resource centers may be selected dependent on application response to the program. The products from these two-week sessions will be added to the web-database after review by ADE curriculum specialists. The minigrant recipients eligible will include 2002-2006 recipients.

Year 2008 workshop. The pattern in year two will be repeated. Twenty-four former Minigrant recipients in four geographic regions corresponding to the Math and Science Resource Centers will be invited to participate in the two-week work sessions. The selection/organizational process and database building will be the same as that during year two. The minigrant recipients eligible will include 2002-2007 recipients.

Year 2009 workshop. During year four, new workshops will encompass efforts to incorporate vertical or horizontal growth. Teachers who have been acknowledged as "Master teachers in a higher level science (as opposed to middle school)" or "experts in middle-school or higher level mathematics" will be eligible to apply to the Arkansas Science & Technology Authority for this summer session and corresponding stipend. Two new workshops will be developed, one for a vertical expansion of the database, and another for a horizontal expansion into mathematics. Two additional workshops will be held using the format of previous years for additional middle school upper elementary science activities. The products from all these two-week sessions will be added to the web-database after review by ADE curriculum specialists. The minigrant recipients eligible will include 2002-2008 recipients. Intense evaluation of the expansion effort will occur at the end of

year 4 to determine if this divergence from minigrants is successful and whether these new paths are fruitful expansions.

Year 2010 workshop. During year five (dependent on year four evaluation), the effort to expand vertically or horizontally may continue or science Minigrants may again be the primary focus. Four workshops will be held and the products from all these two-week sessions will be added to the web-database after review by ADE curriculum specialists. Overall evaluation by an outside evaluator as well as teacher utilization of this on-line access tool will determine the success of program.

Goals and expectations. The goal of this program is to provide access to resources for science and mathematics teachers statewide to enhance the curriculum in the classroom and ultimately improve the instructional level of these specific fields. **The specific objectives** and activities to accomplish each include:

1) **Assemble a collection of valuable activities that teachers may use to enhance specific science/mathematics concepts in their classrooms.**
   - Plan and organize SMART workshops with Math/Science resource center directors and science specialists
   - Conduct two-week workshops to facilitate the development of a collection of the most useful science and/or mathematic activities requiring simple, easily-obtainable materials.
   - Develop these activities into "one-concept" lessons plans (with appropriate sources referenced as needed) for publication on the website.
   - Cross-reference each activity with the state frameworks.
   - Review each framework reference with Science Specialists at ADE to confirm accuracy.
2) **Develop a user-friendly website that provides easy access to science/mathematics activities that are searchable using multiple objectives including target student audience, topic, and state framework concepts.**
   - Determination of specific necessary component and structural organization of website (year one)
   - Design of Website around these structural needs (year one)
   - Website update and modification of workshop materials as necessary (years two-five)
   - Assess the quality and usefulness of various other web-based materials that may be advocated at website (year one)
   - Designing links for these outside resources within the SMART website (year one)
   - Updating website to add or modify additional linked resource sites (years two-five)
3) **Develop a tracking mechanism within the website that will allow evaluation of utilization and impact.**
   - Design registration tool to collect demographic information on user and assign code to track his/her use.
   - Design database to collect information on utilization patterns of registered Arkansas teachers downloading from website

The SMART Website will be patterned after a similar website known as SMILE, coordinated and administered by Illinois Institute of Technology. However, the unique differences that will make the SMART website valuable to Arkansas teachers is the specific cross-referencing to the state frameworks and the inherent proven value of science activities classroom-tested by teachers of the

Minigrants Program. Other websites offering activities such as those of SMILE and other valuable educational programs will be linked so that teachers can search those websites to evaluate the merit of specific activities independently. Examples of the SMILE website and a downloaded lesson plan from that site have been included in **Appendix B** so that reviewers will have a graphic example of the type of website format that will be designed.

D. PROJECT COLLABORATORS –A critical component that adds value to the SMART website and one which will be a strong drawing card promoting teacher use of this website will be the cross-referencing of the "hands-on activities" to the state science frameworks. These frameworks dictate the required curriculum in the public school classrooms. Science specialists at each of the twelve Arkansas Regional Math and Science Resource Centers (members of the Coalition) are very familiar with the framework and are experts at evaluating grade appropriateness of specific science activities. Each teacher that submits one or more one-concept lesson plans that involve these "hands-on" activities will work directly with the Science Specialists during the workshop sessions to determine the appropriate linkage to the state framework and to designate the grade/skill level that is appropriate for each activity. The twelve science specialists at the regional Resource Centers are funded under a National Science Foundation grant. The actual Resource Centers' Directors salaries and overhead cost for facilities are covered by each individual college/university that houses a center. Additional support for each center is generated by consultant fees charged to individual school districts for services rendered. The twelve Math Specialists at each of the regional centers are covered through funds directly from the ADE.

E. TARGET AUDIENCE - The scope of this project is statewide. Two populations will be served by this proposal, one direct and the other indirect, but both vitally important. Directly, all science and later mathematics teachers (both public and parochial) of Arkansas will benefit from this resource tool. Indirectly, but as important, is the benefit that school children will receive from this program. Activities utilized by these teachers will promote hands-on activities in the classroom, will generate a greater enthusiasm for science and mathematics, and will ultimately influence these specific skills in Arkansas students.

F. COMMUNITY INVOLVEMENT IN THE PROJECT'S DEVELOPMENT.
Over the past three years, the Authority has worked with teachers who have been recipients of these awards and collected direct anecdotal data on the tremendous value that the original Minigrant awards have added to their individual classroom. Descriptions of the many diverse activities funded by these awards and the enthusiastic student-reaction have been well documented. These reports inspired the original drive to disseminate these activities to all middle school teachers. In addition, regional science specialists who serve the various school districts across the state have stressed the need for furnishing access to resource material to enhance the science curriculum at the middle school level. With this in mind, numerous workshops involving either science specialist or middle school award recipients have been held to discuss "hands-on" classroom activities in middle school classrooms. Several past recipients of minigrants were been brought in for overnight retreats to discuss the strengths and weaknesses of the Minigrant Program and to plan future directions to enhance science-interest levels of middle school students. Additionally, the retreat members developed literature defining the characteristics of a model "hands-on, inquiry-based" program which will be used statewide with the Minigrant Program. Science specialists and directors of math/science resource centers (who are the infantry of the Coalition) have come together to discuss the need to use activities to enhance the curriculum with the state science frameworks. From these discussions, combined with reports from numerous other past recipients in our growing files, has

grown an awareness of the necessity to circulate the valuable activities developed within the minigrant program to teachers statewide. Past Minigrant recipients have universally validated our premise for a user-friendly web-based resource tool and have helped to plan directives to address selection and propagation of resource materials.

Evaluation of this project was discussed with professional educational consultants and with information technology experts to determine the general requirements for developing a tracking system for evaluation purposes. While a general framework for such a system has been devised for this proposal, many modification will no doubt occur during the initial early piloting period before final implementation in year one. During that testing period, small pilot groups of teachers will access and use the system. During that phase, we will also be able to determine if the information we are tracking will allow efficient and reliable statistical evaluation of data collected with the system.

G. PRODUCTS PRODUCED/LEGAL OWNERSHIP. Intellectual property. A disclaimer will be posted at each topic index of the SMART website. The disclaimer will state, "These lessons may be freely copied and used in a classroom but they remain the copyright property of the author(s), the directors of the SMART program and the Winthrop Rockefeller Foundation." All teachers participating in the summer workshops will sign an affidavit to that effect at the beginning of the workshops as well. WRF will retain intellectual property rights to any newly created activities generated by the Minigrants or developed during the course of the workshops. Activities which have either been abstracted from other sources or which are modified from previously published activities will be duly referenced. These modified and referenced materials and any previously developed materials under the 2002 Science Minigrants program (#9-0203) and subsequent program (#9-0503) will serve as the base for the on-line database of one-concept science lesson plans that all Arkansas teachers can access.

H. EVALUATION. Specific indicators of change that will be tracked and how often. Since each first-time website visitor must register before entering any topic field from the home page during the initial visit, that user will receive a code that can be tracked each time the user returns to website. Additionally, this tracking will allow tallying of specific fields used and materials downloaded to pdf files. This data will be collected on the state server housing the website and will be backed-up daily. With this data, statistical evaluation can be used to evaluate the actual usage of specific fields as a measure of impact of this program on teachers in science and mathematics. The patterns of usage (specific download of materials as opposed to simple perusal) will serve as an indicator of change that can be tracked. The statistical analysis of this data will be done on a yearly basis by the Vice President of Research in collaboration with an outside evaluator using the data furnished by the independent contractor who designs and develops the website.

Data collection system. A private contractor will develop the website and database. This independent contractor will also do the yearly update as new lesson plans are added to the website. The Information Network of Arkansas (INA) will host the website and collect the data recording the website usage. Standard quality control will include daily backup with the data storage. Detailed monthly reports to the Authority generated by the INA office will allow the Authority and the Coalition to monitor the progress of the project.

Evaluation or measurement of program impact on science teachers. The overall evaluation of the program will include three areas: 1) Overall characteristics of website; 2) Use & access of the Arkansas teacher population; and 3) Impact on utilization of "hands-on" activities in the classroom.

The website itself will be evaluated at "mock" workshops for user-friendly characteristics, ease of navigation, linkage to outside sources of valuable resource materials, general appearance, and other general characteristics inherent in any website. General usefulness and interest in the website will be evaluated by using an automatically web-generated total number of hits or visits to the website. This tally feature will be built into the website. Evaluation of the other characteristics will be done by an outside evaluator who will observe teachers using the newly designed website at "mock" workshops. These "mock" workshops serve the purpose not only of evaluation, but also will allow website designers to determine weakness before work proceed on the project, and will allow Resource Centers to better organize and plan for the actual workshops held with teachers in the summers.

The second evaluation point will be determined by a required one-time registration at the website. This will happen the first time a visitor to the website attempts to view lesson plan materials. This registration will collect information to evaluate those utilizing the web materials by requiring completion of a simple questionnaire (approximately 10 questions) that can generate information about the website visitor and the school district in which they are employed. With this registration information a tremendous amount of data can be generated such as the total number of Arkansas residents that use the website, the number of Minigrant and non-Minigrant awardees viewing the website, the grade-levels/subject area of each teacher, demographics of the school district in which the teacher is employed, and teacher's area of specialty (science main certification as opposed to physical education, etc.). This information will provide the data needed to evaluate the effectiveness of outreach to make teachers aware of the SMART program and use by teachers who may or may not have received Minigrants in the past. This data will be provided to WRF annually.

The third component of evaluation (Impact on utilization of "hands-on" activities in the classroom) is address under "Specific indicators of change that will be tracked" below. In general, this will be accomplished by tracking the actual download of lesson plans and patterns of downloads as opposed to general browsing. Although this is an indirect measure, the inference is that a teacher who actually downloads materials generally intends to utilize those ideas in the classroom. Tracking these downloaded materials and comparing with the general demographics of the information on the teacher who is utilizing them generated from the registration will give us some idea as to the impact of this program. Such data can provide information on "hands-on activities" individually in school districts, as well as which areas of the state are benefiting most and least.

I. SUSTAINABILITY – Please describe how this project will be sustained beyond the proposed Winthrop Rockefeller Foundation funding period. Intense outreach to inform teachers statewide of the existence of the website will be accomplished with a multi-dimensional approach. Information on the website will be promoted in newsletters of the Arkansas Council of Teachers of Mathematics and the Arkansas Science Teachers Association, and on listservs of those organizations. Ad space will be purchased in journals such as that of the Arkansas Education Association. Brochures describing the website will be mailed to each school district throughout the state by the Authority. Introductory seminars and/or information booths on the website will be utilized at the annual Mathematics and Science Leadership Conference and the annual Arkansas Conference on Teaching. Brochures on the website will be provided to ADHE and ADE to use and

distribute at all workshops involving science and/or math teachers. Math/Science Resource Centers will have abundant literature on the website and will actively promote its use when working with teachers throughout the state.

We are predicting that data collected during years three through five will support the increasing usage of this website as a valuable resource tool for teachers. We are also assuming that involvement of the specialists of the ADE who will be reviewing the materials for correct framework alignment will create a positive attitude toward this program within that state agency. The Arkansas Department of Higher Education will also be involved indirectly with this website, since they continually evaluate programs to provide continuing education and assist teachers in meeting state requirements. The two agencies will also be drawn into the program through their assistance in selection of "master" teachers who will work in some of the specialized expansion workshops held during year four and year five. The combined influence of teacher's response to the program and the involvement of the two agencies, ADE and ADHE, will set the stage to move this program to one of these agencies or to possibly maintain it as a hybrid of the two. During all five years of this program, efforts will be made to bring this project to the attention of public policy makers, to enlighten them of the need for this work, and to provide demonstrations of the website at organized educational forums and at other events in which policy makers will be present. The Authority and the Coalition (whose membership includes policy makers and representative of influential business sectors) will work together to include this program within the budget of one of the educational agencies for sustainability. The Coalition (whose board members include the directors of ADE and ADHE) are integral in the administration of the program through their organizational structure governing the Math/Science Resource Centers. The Resource Centers will retain the management of the workshops for long-term quality and stability of the program with the financial assistance of the appropriate state agency.

INTERNAL	EXTERNAL
STRENGTHS	**OPPORTUNITIES**
Statewide program with free access for all teachers	Will provide activities to enhance curriculum and stimulate student interest in science & math
WEAKNESSES	**THREATS**
Subpopulation of teacher lacking computer skills may need the program the most	Teacher discomfort with change in curriculum